

$f_0(1370)$ $I^G(J^{PC}) = 0^+(0^{++})$

See also the mini-reviews on scalar mesons under $f_0(500)$ (see the index for the page number) and on non- $q\bar{q}$ candidates in PDG 06, Journal of Physics, G **33** 1 (2006).

$f_0(1370)$ T-MATRIX POLE POSITION

Note that $\Gamma \approx 2 \operatorname{Im}(\sqrt{s_{\text{pole}}})$.

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
(1200–1500)–i(150–250) OUR ESTIMATE			
• • • We do not use the following data for averages, fits, limits, etc. • • •			
(1290 ± 50)– i (170 ⁺²⁰ _{−40})	¹ ANISOVICH	09 RVUE	0.0 $\bar{p}p, \pi N$
(1373 ± 15)– i (137 ± 10)	² BARGIOTTI	03 OBLX	$\bar{p}p$
(1302 ± 17)– i (166 ± 18)	³ BARBERIS	00C	450 $p p \rightarrow p_f 4\pi p_s$
(1312 ± 25 ± 10)– i (109 ± 22 ± 15)	BARBERIS	99D OMEG	450 $p p \rightarrow K^+ K^-, \pi^+ \pi^-$
(1406 ± 19)– i (80 ± 6)	⁴ KAMINSKI	99 RVUE	$\pi\pi \rightarrow \pi\pi, K\bar{K}, \sigma\sigma$
(1300 ± 20)– i (120 ± 20)	ANISOVICH	98B RVUE	Compilation
(1290 ± 15)– i (145 ± 15)	BARBERIS	97B OMEG	450 $p p \rightarrow \bar{p}p 2(\pi^+ \pi^-)$
(1548 ± 40)– i (560 ± 40)	BERTIN	97C OBLX	0.0 $\bar{p}p \rightarrow \pi^+ \pi^- \pi^0$
(1380 ± 40)– i (180 ± 25)	ABELE	96B CBAR	0.0 $\bar{p}p \rightarrow \pi^0 K_L^0 K_L^0$
(1300 ± 15)– i (115 ± 8)	BUGG	96 RVUE	
(1330 ± 50)– i (150 ± 40)	⁵ AMSLER	95B CBAR	$\bar{p}p \rightarrow 3\pi^0$
(1360 ± 35)– i (150–300)	⁵ AMSLER	95C CBAR	$\bar{p}p \rightarrow \pi^0 \eta\eta$
(1390 ± 30)– i (190 ± 40)	⁶ AMSLER	95D CBAR	$\bar{p}p \rightarrow 3\pi^0, \pi^0 \eta\eta, \pi^0 \pi^0 \eta$
1346 – i 249	^{7,8} JANSEN	95 RVUE	$\pi\pi \rightarrow \pi\pi, K\bar{K}$
1214 – i 168	^{8,9} TORNQVIST	95 RVUE	$\pi\pi \rightarrow \pi\pi, K\bar{K}, K\pi, \eta\pi$
1364 – i 139	AMSLER	94D CBAR	$\bar{p}p \rightarrow \pi^0 \pi^0 \eta$
(1365 ⁺²⁰ _{−55})– i (134 ± 35)	ANISOVICH	94 CBAR	$\bar{p}p \rightarrow 3\pi^0, \pi^0 \eta\eta$
(1340 ± 40)– i (127 ⁺³⁰ _{−20})	¹⁰ BUGG	94 RVUE	$\bar{p}p \rightarrow 3\pi^0, \eta\eta\pi^0, \eta\pi^0 \pi^0$
(1430 ± 5)– i (73 ± 13)	¹¹ KAMINSKI	94 RVUE	$\pi\pi \rightarrow \pi\pi, K\bar{K}$
1420 – i 220	¹² AU	87 RVUE	$\pi\pi \rightarrow \pi\pi, K\bar{K}$

1 Another pole is found at $(1510 \pm 130) - i(800 \pm 100)$ MeV.

2 Coupled channel analysis of $\pi^+ \pi^- \pi^0$, $K^+ K^- \pi^0$, and $K^\pm K_S^0 \pi^\mp$.

3 Average between $\pi^+ \pi^- 2\pi^0$ and $2(\pi^+ \pi^-)$.

4 T-matrix pole on sheet ——.

5 Supersedes ANISOVICH 94.

6 Coupled-channel analysis of $\bar{p}p \rightarrow 3\pi^0, \pi^0 \eta\eta$, and $\pi^0 \pi^0 \eta$ on sheet IV. Demonstrates explicitly that $f_0(500)$ and $f_0(1370)$ are two different poles.

7 Analysis of data from FALVARD 88.

8 The pole is on Sheet III. Demonstrates explicitly that $f_0(500)$ and $f_0(1370)$ are two different poles.

9 Uses data from BEIER 72B, OCHS 73, HYAMS 73, GRAYER 74, ROSSELET 77, CASON 83, ASTON 88, and ARMSTRONG 91B. Coupled channel analysis with flavor symmetry and all light two-pseudoscalars systems.

10 Reanalysis of ANISOVICH 94 data.

11 T-matrix pole on sheet III.

12 Analysis of data from OCHS 73, GRAYER 74, BECKER 79, and CASON 83.

$f_0(1370)$ BREIT-WIGNER MASS OR K-MATRIX POLE PARAMETER

VALUE (MeV)	DOCUMENT ID
1200 to 1500 OUR ESTIMATE	

NODE=M147

NODE=M147

NODE=M147PP

NODE=M147PP

NODE=M147PP

→ UNCHECKED ←

OCCUR=2

OCCUR=2

OCCUR=2

NODE=M147PP;LINKAGE=AO

NODE=M147PP;LINKAGE=BG

NODE=M147PP;LINKAGE=PC

NODE=M147PP;LINKAGE=TK

NODE=M147PP;LINKAGE=K

NODE=M147PP;LINKAGE=A

NODE=M147PP;LINKAGE=C

NODE=M147PP;LINKAGE=DD

NODE=M147PP;LINKAGE=BB

NODE=M147PP;LINKAGE=C1

NODE=M147PP;LINKAGE=KM

NODE=M147PP;LINKAGE=H

NODE=M147205

NODE=M147M

→ UNCHECKED ←

$\pi\pi$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1400±40	13	AUBERT	09L	BABR $B^\pm \rightarrow \pi^\pm \pi^\pm \pi^\mp$
1470 $^+ 6$ $_7$ $^{+ 72}$ $_{-255}$	14	UEHARA	08A	BELL $10.6 e^+ e^- \rightarrow e^+ e^- \pi^0 \pi^0$
1259±55	2.6k	BONVICINI	07	CLEO $D^+ \rightarrow \pi^- \pi^+ \pi^+$
1309± 1± 15	15	BUGG	07A	RVUE $0.0 p\bar{p} \rightarrow 3\pi^0$
1449±13	4.3k	16 GARMASH	06	BELL $B^+ \rightarrow K^+ \pi^+ \pi^-$
1350±50		ABLIKIM	05	BES2 $J/\psi \rightarrow \phi \pi^+ \pi^-$
1265±30 $^{+ 20}$ $_{-35}$		ABLIKIM	05Q	BES2 $\psi(2S) \rightarrow \gamma \pi^+ \pi^- K^+ K^-$
1434±18± 9	848	AITALA	01A	E791 $D_s^+ \rightarrow \pi^- \pi^+ \pi^+$
1308±10		BARBERIS	99B	OMEG $450 pp \rightarrow p_s p_f \pi^+ \pi^-$
1315±50		BELLAZZINI	99	GAM4 $450 pp \rightarrow p p \pi^0 \pi^0$
1315±30		ALDE	98	GAM4 $100 \pi^- p \rightarrow \pi^0 \pi^0 n$
1280±55		BERTIN	98	OBLX $0.05-0.405 \bar{n} p \rightarrow \pi^+ \pi^+ \pi^-$
1186	17,18	TORNQVIST	95	RVUE $\pi\pi \rightarrow \pi\pi, K\bar{K}, K\pi, \eta\pi$
1472±12		ARMSTRONG	91	OMEG $300 pp \rightarrow p p \pi\pi, p p K\bar{K}$
1275±20		BREAKSTONE	90	SFM $62 pp \rightarrow p p \pi^+ \pi^-$
1420±20		AKESSON	86	SPEC $63 pp \rightarrow p p \pi^+ \pi^-$
1256		FROGGATT	77	RVUE $\pi^+ \pi^-$ channel

13 Breit-Wigner mass.

14 Breit-Wigner mass. May also be the $f_0(1500)$.

15 Reanalysis of ABELE 96C data.

16 Also observed by GARMASH 07 in $B^0 \rightarrow K_S^0 \pi^+ \pi^-$ decays. Supersedes GARMASH 05.

17 Uses data from BEIER 72B, OCHS 73, HYAMS 73, GRAYER 74, ROSSELET 77, CASON 83, ASTON 88, and ARMSTRONG 91B. Coupled channel analysis with flavor symmetry and all light two-pseudoscalars systems.

18 Also observed by ASNER 00 in $\tau^- \rightarrow \pi^- \pi^0 \pi^0 \nu_\tau$ decays

NODE=M147M1

NODE=M147M1

 $K\bar{K}$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1440± 6		VLADIMIRSK...	06	SPEC $40 \pi^- p \rightarrow K_S^0 K_S^0 n$
1391±10		TIKHOMIROV	03	SPEC $40.0 \pi^- C \rightarrow K_S^0 K_S^0 K_L^0 X$
1440±50		BOLONKIN	88	SPEC $40 \pi^- p \rightarrow K_S^0 K_S^0 n$
1463± 9		ETKIN	82B	MPS $23 \pi^- p \rightarrow n 2 K_S^0$
1425±15		WICKLUND	80	SPEC $6 \pi N \rightarrow K^+ K^- N$
~1300		POLYCHRO...	79	STRC $7 \pi^- p \rightarrow n 2 K_S^0$

NODE=M147M1;LINKAGE=BW

NODE=M147M1;LINKAGE=UE

NODE=M147M1;LINKAGE=BU

NODE=M147M1;LINKAGE=GR

NODE=M147M1;LINKAGE=BB

 4π MODE 2($\pi\pi$) $S+\rho\rho$

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1395±40		ABELE	01	CBAR $0.0 \bar{p}d \rightarrow \pi^- 4\pi^0 p$
1374±38		AMSLER	94	CBAR $0.0 \bar{p}p \rightarrow \pi^+ \pi^- 3\pi^0$
1345±12		ADAMO	93	OBLX $\bar{n}p \rightarrow 3\pi^+ 2\pi^-$
1386±30		GASPERO	93	DBC $0.0 \bar{p}n \rightarrow 2\pi^+ 3\pi^-$
~1410	5751	19 BETTINI	66	DBC $0.0 \bar{p}n \rightarrow 2\pi^+ 3\pi^-$

19 $\rho\rho$ dominant.

NODE=M147M3

NODE=M147M3

 $\eta\eta$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1262 $^{+51}_{-78}$ $^{+82}_{-103}$	20	UEHARA	10A	BELL $10.6 e^+ e^- \rightarrow e^+ e^- \eta\eta$
1430		AMSLER	92	CBAR $0.0 \bar{p}p \rightarrow \pi^0 \eta\eta$
1220±40		ALDE	86D	GAM4 $100 \pi^- p \rightarrow n 2\eta$

20 Breit-Wigner mass. May also be the $f_0(1500)$.

NODE=M147M3;LINKAGE=BE

NODE=M147M4

NODE=M147M4

NODE=M147M4;LINKAGE=UE

COUPLED CHANNEL MODE

VALUE (MeV)	DOCUMENT ID	TECN
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• • • We do not use the following data for averages, fits, limits, etc. • • •

1306±20 21 ANISOVICH 03 RVUE

21 K-matrix pole from combined analysis of $\pi^- p \rightarrow \pi^0 \pi^0 n$, $\pi^- p \rightarrow K\bar{K}n$, $\pi^+ \pi^- \rightarrow \pi^+ \pi^-$, $\bar{p}p \rightarrow \pi^0 \pi^0 \pi^0$, $\pi^0 \eta \eta$, $\pi^0 \pi^0 \eta$, $\pi^+ \pi^- \pi^0$, $K^+ K^- \pi^0$, $K_S^0 K_S^0 \pi^0$, $K^+ K_S^0 \pi^-$ at rest, $\bar{p}n \rightarrow \pi^- \pi^- \pi^+$, $K_S^0 K^- \pi^0$, $K_S^0 K_S^0 \pi^-$ at rest.

NODE=M147M5

NODE=M147M5

 $f_0(1370)$ BREIT-WIGNER WIDTH

VALUE (MeV)	DOCUMENT ID
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200 to 500 OUR ESTIMATE

 $\pi\pi$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
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• • • We do not use the following data for averages, fits, limits, etc. • • •

300± 80 22 AUBERT 09L BABR $B^\pm \rightarrow \pi^\pm \pi^\pm \pi^\mp$

90₋⁺ 2₋⁺ 50 23 UEHARA 08A BELL $10.6 e^+ e^- \rightarrow e^+ e^- \pi^0 \pi^0$

298± 21 2.6k BONVICINI 07 CLEO $D^+ \rightarrow \pi^- \pi^+ \pi^+$

126± 25 4286 GARMASH 06 BELL $B^+ \rightarrow K^+ \pi^+ \pi^-$

265± 40 ABLIKIM 05 BES2 $J/\psi \rightarrow \phi \pi^+ \pi^-$

350±100₋⁺¹⁰⁵ 60 ABLIKIM 05Q BES2 $\psi(2S) \rightarrow \gamma \pi^+ \pi^- K^+ K^-$

173± 32± 6 848 AITALA 01A E791 $D_s^+ \rightarrow \pi^- \pi^+ \pi^+$

222± 20 BARBERIS 99B OMEG 450 $p p \rightarrow p_S p_f \pi^+ \pi^-$

255± 60 BELLAZZINI 99 GAM4 450 $p p \rightarrow p p \pi^0 \pi^0$

190± 50 ALDE 98 GAM4 100 $\pi^- p \rightarrow \pi^0 \pi^0 n$

323± 13 BERTIN 98 OBLX 0.05–0.405 $\bar{n}p \rightarrow \pi^+ \pi^+ \pi^-$

350 25,26 TORNQVIST 95 RVUE $\pi\pi \rightarrow \pi\pi, K\bar{K}, K\pi, \eta\pi$

195± 33 ARMSTRONG 91 OMEG 300 $p p \rightarrow p p \pi\pi, p p K\bar{K}$

285± 60 BREAKSTONE 90 SFM 62 $p p \rightarrow p p \pi^+ \pi^-$

460± 50 AKESSON 86 SPEC 63 $p p \rightarrow p p \pi^+ \pi^-$

~ 400 27 FROGGATT 77 RVUE $\pi^+ \pi^-$ channel

NODE=M147210

NODE=M147W
→ UNCHECKED ←NODE=M147W1
NODE=M147W1

22 The systematic errors are not reported.

23 Breit-Wigner width. May also be the $f_0(1500)$.

24 Also observed by GARMASH 07 in $B^0 \rightarrow K_S^0 \pi^+ \pi^-$ decays. Supersedes GARMASH 05.

25 Uses data from BEIER 72B, OCHS 73, HYAMS 73, GRAYER 74, ROSSELET 77, CASON 83, ASTON 88, and ARMSTRONG 91B. Coupled channel analysis with flavor symmetry and all light two-pseudoscalars systems.

26 Also observed by ASNER 00 in $\tau^- \rightarrow \pi^- \pi^0 \pi^0 \nu_\tau$ decays

27 Width defined as distance between 45 and 135° phase shift.

NODE=M147W1;LINKAGE=NS
NODE=M147W1;LINKAGE=UE
NODE=M147W1;LINKAGE=GR
NODE=M147W1;LINKAGE=BBNODE=M147W1;LINKAGE=FF
NODE=M147W1;LINKAGE=ENODE=M147W2
NODE=M147W2

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
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• • • We do not use the following data for averages, fits, limits, etc. • • •

121± 15 VLADIMIRSK...06 SPEC 40 $\pi^- p \rightarrow K_S^0 K_S^0 n$

55± 26 TIKHOMIROV 03 SPEC 40.0 $\pi^- C \rightarrow K_S^0 K_S^0 K_L^0 X$

250± 80 BOLONKIN 88 SPEC 40 $\pi^- p \rightarrow K_S^0 K_S^0 n$

118₋⁺¹³⁸ 16 ETKIN 82B MPS 23 $\pi^- p \rightarrow n 2 K_S^0$

160± 30 WICKLUND 80 SPEC 6 $\pi N \rightarrow K^+ K^- N$

~ 150 POLYCHRO... 79 STRC 7 $\pi^- p \rightarrow n 2 K_S^0$

NODE=M147W3
NODE=M147W3 **4π MODE 2($\pi\pi$) $S+\rho\rho$**

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
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• • • We do not use the following data for averages, fits, limits, etc. • • •

275±55 ABELE 01 CBAR 0.0 $\bar{p}d \rightarrow \pi^- 4\pi^0 p$

375±61 AMSLER 94 CBAR 0.0 $\bar{p}p \rightarrow \pi^+ \pi^- 3\pi^0$

398±26 ADAMO 93 OBLX $\bar{n}p \rightarrow 3\pi^+ 2\pi^-$

310±50 GASPERO 93 DBC 0.0 $\bar{p}n \rightarrow 2\pi^+ 3\pi^-$

~ 90 5751 28 BETTINI 66 DBC 0.0 $\bar{p}n \rightarrow 2\pi^+ 3\pi^-$

28 $\rho\rho$ dominant.

NODE=M147W3;LINKAGE=BE

$\eta\eta$ MODE

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
484 $^{+246}_{-170}$ $^{+246}_{-263}$	29 UEHARA	10A BELL	10.6 $e^+ e^- \rightarrow e^+ e^- \eta\eta$
250	AMSLER	92 CBAR	0.0 $\bar{p}p \rightarrow \pi^0 \eta\eta$
320 \pm 40	ALDE	86D GAM4	100 $\pi^- p \rightarrow n2\eta$
29 Breit-Wigner width. May also be the $f_0(1500)$.			

NODE=M147W4

NODE=M147W4

COUPLED CHANNEL MODE

VALUE (MeV)	DOCUMENT ID	TECN
• • • We do not use the following data for averages, fits, limits, etc. • • •		
147 $^{+30}_{-50}$	30 ANISOVICH	03 RVUE
30 K-matrix pole from combined analysis of $\pi^- p \rightarrow \pi^0 \pi^0 n$, $\pi^- p \rightarrow K\bar{K}n$, $\pi^+ \pi^- \rightarrow \pi^+ \pi^-$, $\bar{p}p \rightarrow \pi^0 \pi^0 \pi^0$, $\pi^0 \eta\eta$, $\pi^0 \pi^0 \eta$, $\pi^+ \pi^- \pi^0$, $K^+ K^- \pi^0$, $K_S^0 K_S^0 \pi^0$, $K^+ K_S^0 \pi^-$ at rest, $\bar{p}n \rightarrow \pi^- \pi^- \pi^+$, $K_S^0 K^- \pi^0$, $K_S^0 K_S^0 \pi^-$ at rest.		

NODE=M147W4;LINKAGE=UE

NODE=M147W5

NODE=M147W5

 $f_0(1370)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
$\Gamma_1 \pi\pi$	seen
$\Gamma_2 4\pi$	seen
$\Gamma_3 4\pi^0$	seen
$\Gamma_4 2\pi^+ 2\pi^-$	seen
$\Gamma_5 \pi^+ \pi^- 2\pi^0$	seen
$\Gamma_6 \rho\rho$	dominant
$\Gamma_7 2(\pi\pi)_S$ -wave	seen
$\Gamma_8 \pi(1300)\pi$	seen
$\Gamma_9 a_1(1260)\pi$	seen
$\Gamma_{10} \eta\eta$	seen
$\Gamma_{11} K\bar{K}$	seen
$\Gamma_{12} K\bar{K}n\pi$	not seen
$\Gamma_{13} 6\pi$	not seen
$\Gamma_{14} \omega\omega$	not seen
$\Gamma_{15} \gamma\gamma$	seen
$\Gamma_{16} e^+ e^-$	not seen

NODE=M147215;NODE=M147

 $f_0(1370)$ PARTIAL WIDTHS **$\Gamma(\gamma\gamma)$** **Γ_{15}** See $\gamma\gamma$ widths under $f_0(500)$ and MORGAN 90.

NODE=M147217

 $\Gamma(e^+ e^-)$ **Γ_{16}**

VALUE (eV)	CL%	DOCUMENT ID	TECN	COMMENT
<20	90	VOROBIEV	88	ND $e^+ e^- \rightarrow \pi^0 \pi^0$

NODE=M147W11

NODE=M147W11

NODE=M147W11

NODE=M147W12

NODE=M147W12

 $f_0(1370) \Gamma(i)\Gamma(\gamma\gamma)/\Gamma(\text{total})$ **$\Gamma(\eta\eta) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$** **$\Gamma_{10}\Gamma_{15}/\Gamma$**

VALUE (eV)	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			

NODE=M147225

121 $^{+133}_{-53}$ $^{+169}_{-106}$ 31 UEHARA 10A BELL 10.6 $e^+ e^- \rightarrow e^+ e^- \eta\eta$ 31 Including interference with the $f'_2(1525)$ (parameters fixed to the values from the 2008 edition of this review, PDG 08) and $f_2(1270)$. May also be the $f_0(1500)$.

NODE=M147G01

NODE=M147G01

NODE=M147G01;LINKAGE=UE

$f_0(1370)$ BRANCHING RATIOS **$\Gamma(\pi\pi)/\Gamma_{\text{total}}$**

VALUE	DOCUMENT ID	TECN	COMMENT	Γ_1/Γ
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.26±0.09	BUGG	96	RVUE	
<0.15	32 AMSLER	94	CBAR $\bar{p}p \rightarrow \pi^+ \pi^- 3\pi^0$	
<0.06	GASPERO	93	DBC 0.0 $\bar{p}n \rightarrow$ hadrons	
32 Using AMSLER 95B ($3\pi^0$).				

NODE=M147220

NODE=M147R3
NODE=M147R3

NODE=M147R3;LINKAGE=B

NODE=M147R4
NODE=M147R4 **$\Gamma(4\pi)/\Gamma_{\text{total}}$**

VALUE	DOCUMENT ID	TECN	COMMENT	$\Gamma_2/\Gamma = (\Gamma_3 + \Gamma_4 + \Gamma_5)/\Gamma$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
>0.72	GASPERO	93	DBC 0.0 $\bar{p}n \rightarrow$ hadrons	

NODE=M147R4
NODE=M147R4 **$\Gamma(4\pi^0)/\Gamma(4\pi)$**

VALUE	DOCUMENT ID	TECN	COMMENT	Γ_3/Γ_2
• • • We do not use the following data for averages, fits, limits, etc. • • •				
seen	ABELE	96	CBAR 0.0 $\bar{p}p \rightarrow 5\pi^0$	
0.068±0.005	33 GASPERO	93	DBC 0.0 $\bar{p}n \rightarrow$ hadrons	

NODE=M147R12
NODE=M147R12

33 Model-dependent evaluation.

VALUE	DOCUMENT ID	TECN	COMMENT	$\Gamma_4/\Gamma_2 = \Gamma_4/(\Gamma_3 + \Gamma_4 + \Gamma_5)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.420±0.014	34 GASPERO	93	DBC 0.0 $\bar{p}n \rightarrow 2\pi^+ 3\pi^-$	

NODE=M147R12;LINKAGE=GA

NODE=M147R5
NODE=M147R5 **$\Gamma(\pi^+\pi^-2\pi^0)/\Gamma(4\pi)$**

VALUE	DOCUMENT ID	TECN	COMMENT	$\Gamma_5/\Gamma_2 = \Gamma_5/(\Gamma_3 + \Gamma_4 + \Gamma_5)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.512±0.019	35 GASPERO	93	DBC 0.0 $\bar{p}n \rightarrow$ hadrons	

NODE=M147R6
NODE=M147R6

35 Model-dependent evaluation.

 $\Gamma(\rho\rho)/\Gamma(4\pi)$

VALUE	DOCUMENT ID	TECN	COMMENT	Γ_6/Γ_2
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.26±0.07	ABELE	01B	CBAR 0.0 $\bar{p}d \rightarrow 5\pi p$	

NODE=M147R17
NODE=M147R17 **$\Gamma(2(\pi\pi)s\text{-wave})/\Gamma(\pi\pi)$**

VALUE	DOCUMENT ID	TECN	COMMENT	Γ_7/Γ_1
• • • We do not use the following data for averages, fits, limits, etc. • • •				
5.6±2.6	36 ABELE	01	CBAR 0.0 $\bar{p}d \rightarrow \pi^- 4\pi^0 p$	

NODE=M147R15
NODE=M147R15

36 From the combined data of ABELE 96 and ABELE 96C.

 $\Gamma(2(\pi\pi)s\text{-wave})/\Gamma(4\pi)$

VALUE	DOCUMENT ID	TECN	COMMENT	Γ_7/Γ_2
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.51±0.09	ABELE	01B	CBAR 0.0 $\bar{p}d \rightarrow 5\pi p$	

NODE=M147R;LINKAGE=KZ

NODE=M147R16
NODE=M147R16 **$\Gamma(\rho\rho)/\Gamma(2(\pi\pi)s\text{-wave})$**

VALUE	DOCUMENT ID	TECN	COMMENT	Γ_6/Γ_7
• • • We do not use the following data for averages, fits, limits, etc. • • •				
large	BARBERIS	00C	450 $p p \rightarrow p_f 4\pi p_s$	
1.6 ± 0.2	AMSLER	94	CBAR $\bar{p}p \rightarrow \pi^+ \pi^- 3\pi^0$	
~ 0.65	GASPERO	93	DBC 0.0 $\bar{p}n \rightarrow$ hadrons	

NODE=M147R10
NODE=M147R10

OCCUR=2

 $\Gamma(\pi(1300)\pi)/\Gamma(4\pi)$

VALUE	DOCUMENT ID	TECN	COMMENT	Γ_8/Γ_2
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.17±0.06	ABELE	01B	CBAR 0.0 $\bar{p}d \rightarrow 5\pi p$	

NODE=M147R18
NODE=M147R18

$\Gamma(a_1(1260)\pi)/\Gamma(4\pi)$	Γ_9/Γ_2
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •	
0.06±0.02	ABELE 01B CBAR 0.0 $\bar{p}d \rightarrow 5\pi p$
$\Gamma(\eta\eta)/\Gamma(4\pi)$	$\Gamma_{10}/\Gamma_2 = \Gamma_{10}/(\Gamma_3 + \Gamma_4 + \Gamma_5)$
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •	
(28 ±11) × 10 ⁻³	37 ANISOVICH 02D SPEC Combined fit
(4.7 ± 2.0) × 10 ⁻³	BARBERIS 00E 450 $p\bar{p} \rightarrow p_f \eta\eta p_s$
37 From a combined K-matrix analysis of Crystal Barrel (0. $p\bar{p} \rightarrow \pi^0\pi^0\pi^0$, $\pi^0\eta\eta$, $\pi^0\pi^0\eta$), GAMS ($\pi p \rightarrow \pi^0\pi^0n$, $\eta\eta n$, $\eta\eta' n$), and BNL ($\pi p \rightarrow K\bar{K}n$) data.	NODE=M147R14;LINKAGE=CH
$\Gamma(K\bar{K})/\Gamma_{\text{total}}$	Γ_{11}/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •	
0.35±0.13	BUGG 96 RVUE
$\Gamma(K\bar{K})/\Gamma(\pi\pi)$	Γ_{11}/Γ_1
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •	
0.08±0.08	ABLIKIM 05 BES2 $J/\psi \rightarrow \phi\pi^+\pi^-$, ϕK^+K^-
0.91±0.20	38 BARGIOTTI 03 OBLX $\bar{p}p$
0.12±0.06	39 ANISOVICH 02D SPEC Combined fit
0.46±0.15±0.11	BARBERIS 99D OMEG 450 $p\bar{p} \rightarrow K^+K^-$, $\pi^+\pi^-$
38 Coupled channel analysis of $\pi^+\pi^-\pi^0$, $K^+K^-\pi^0$, and $K^\pm K_S^0\pi^\mp$.	
39 From a combined K-matrix analysis of Crystal Barrel (0. $p\bar{p} \rightarrow \pi^0\pi^0\pi^0$, $\pi^0\eta\eta$, $\pi^0\pi^0\eta$), GAMS ($\pi p \rightarrow \pi^0\pi^0n$, $\eta\eta n$, $\eta\eta' n$), and BNL ($\pi p \rightarrow K\bar{K}n$) data.	NODE=M147R;LINKAGE=BG NODE=M147R;LINKAGE=CH
$\Gamma(K\bar{K}n\pi)/\Gamma_{\text{total}}$	Γ_{12}/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •	
<0.03	GASPERO 93 DBC 0.0 $\bar{p}n \rightarrow$ hadrons
$\Gamma(6\pi)/\Gamma_{\text{total}}$	Γ_{13}/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •	
<0.22	GASPERO 93 DBC 0.0 $\bar{p}n \rightarrow$ hadrons
$\Gamma(\omega\omega)/\Gamma_{\text{total}}$	Γ_{14}/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •	
<0.13	GASPERO 93 DBC 0.0 $\bar{p}n \rightarrow$ hadrons

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	Translated from YAF 65 1583.	

REFID=53641

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NODE=M147

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ABELE	01B	EPJ C21 261	A. Abele <i>et al.</i>	(Crystal Barrel Collab.)	REFID=48356
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ASNER	00	PR D61 012002	D.M. Asner <i>et al.</i>	(CLEO Collab.)	REFID=47339
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ALDE	98	EPJ A3 361	D. Alde <i>et al.</i>	(GAM4 Collab.)	REFID=46605
Also		PAN 62 405	D. Alde <i>et al.</i>	(GAMS Collab.)	REFID=46914
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MORGAN	90	ZPHY C48 623	D. Morgan, M.R. Pennington	(RAL, DURH)	REFID=41583
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ROSSELET	77	PR D15 574	L. Rosselet <i>et al.</i>	(GEVA, SACL)	REFID=11004
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HYAMS	73	NP B64 134	B.D. Hyams <i>et al.</i>	(CERN, MPIM)	REFID=20107
OCHS	73	Thesis	W. Ochs	(MPIM, MUNI)	REFID=20349
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